

# Impacts of Visitor Spending on Local Economy: Sequoia and Kings Canyon National Parks, 2002



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## Executive Summary

Sequoia and Kings Canyon National Parks hosted a combined total of 1.47 million recreation visits in 2002, 920,292 visits to Sequoia and 545,420 visits to Kings Canyon. For this analysis, the two parks are treated as a single travel destination. After omitting double counting of visitors who visit both parks on a single trip, there were 1.135 million distinct recreation visits in 2002. Park visitors spent \$65 million dollars within the local region, defined to include Tulare and Fresno counties. Park visitor spending generated \$22.3 million in direct personal income (wages and salaries) for local residents, supporting 1,243 jobs in the area.

Economic impacts were estimated with the updated National Park Service Money Generation Model (version 2). The MGM2 model uses park visitation data, spending averages from the 2002 Sequoia & Kings Canyon National Park Visitor Study and multipliers from an input-output model (IMPLAN) of the Fresno/Tulare County region to estimate spending, income and jobs attributable to the park. The 1.135 million recreation visits in 2002 equates to 536,000 party nights<sup>1</sup> spent by park visitors in the local area (Table E1).

The economic analysis breaks visitors into seven segments. The three largest segments in terms of recreation visits were visitors staying overnight in hotels outside the park (33%), followed by non-local day visitors (24%)<sup>2</sup> and local day visitors (22%). Park visitors accounted for about 30,000 room nights at park hotels and 193,000 room nights outside the park. Campers accounted for 71,000 camping nights inside the park and 45,000 camping nights outside the park.

**Table E1. Sequoia and Kings Canyon National Parks Visits and Spending by Visitor Segments, 2002**

Visitor segment	Recreation visits (000's)	Party nights (000's)	Average spending (per party night)	Total spending (millions)	Pct of spending
Local day trip <sup>a</sup>	271	84	\$57	\$4.8	7%
Non-local day rip	250	77	\$62	\$4.8	7%
Hotel-Inside park	38	30	\$237	\$7.1	11%
Camp-Inside park	84	71	\$72	\$5.1	8%
Backcountry campers	35	37	\$29	\$1.1	2%
Hotel-Outside park	379	193	\$203	\$39.2	60%
<u>Camp-Outside park</u>	<u>77</u>	<u>45</u>	<u>\$67</u>	<u>\$3.0</u>	<u>5%</u>
Total	1,135	536	\$121	\$65.0	100%

a. Locals are defined as residents of Tulare or Fresno counties

<sup>1</sup> A party night is defined as one travel party (vehicle) spending one night in the local area. For visitors on day trips, the party day is the unit of analysis.

<sup>2</sup> Local visitors reside in the two county region. Visitors staying with friends and relatives or at an owned seasonal home in the area are treated as non-local day visitors for the economic analysis.

On average, park visitors spent \$121 per party per day in the local area with spending varying considerably across the seven lodging segments - from \$237 per party per night for visitors staying at park lodges to \$29 per party per night for backcountry campers. An average visitor party consists of 3.18 people. Visitors staying in hotels outside the park accounted for 60% of total park visitor spending, followed by overnight visitors at park lodges (11%).

The majority of the visitor spending accrues to the lodging<sup>3</sup> (\$27.4 million) and restaurant (\$11.3 million) sectors. Visitor spending directly supports 1,243 area jobs paying \$22.3 million in wages and salaries. The sales multiplier for the two county region around the park was 1.61, meaning that an additional \$0.61 in sales is generated through secondary effects for every dollar of direct sales (Table E2). Secondary effects generated an additional 417 jobs, about \$12.8 million in personal income, and \$20.7 million in value added as visitor spending circulates through the local economy. In total, visitor spending within the parks and the local communities supported \$90.7 million of direct sales, \$35.1 million of personal income, \$54.4 million of value added and 1,660 jobs in 2002.

**Table E2. Economic Impacts of Sequoia and Kings Canyon National Parks  
Visitor Spending, 2002**

Sector/Spending category	Direct Sales \$000's	Jobs	Personal Income \$000's	Value Added \$000's
<b>Direct Effects</b>				
Motel, hotel cabin or B&B	\$25,144	525	\$9,601	\$14,952
Camping fees	\$2,238	47	\$854	\$1,331
Restaurants & bars	\$11,341	309	\$4,264	\$6,026
Admissions & fees	\$4,514	142	\$1,918	\$2,870
Local transportation	\$3,941	78	\$2,042	\$2,530
Retail Trade	\$5,668	119	\$2,786	\$4,555
Wholesale Trade	\$1,348	13	\$563	\$929
<u>Local Production of goods</u>	<u>\$2,284</u>	<u>10</u>	<u>\$253</u>	<u>\$450</u>
<b>Total Direct Effects</b>	<b>\$56,479</b>	<b>1,243</b>	<b>\$22,282</b>	<b>\$33,643</b>
<u>Secondary Effects</u>	<u>\$34,191</u>	<u>417</u>	<u>\$12,774</u>	<u>\$20,717</u>
<b>Total Effects</b>	<b>\$90,670</b>	<b>1,660</b>	<b>\$35,055</b>	<b>\$54,360</b>

<sup>3</sup> Includes hotels, motels, B&B's, and campgrounds, covering lodging inside and outside the park.

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## **Impacts of Visitor Spending on Local Economy: Sequoia and Kings Canyon National Parks, 2002**

### **Introduction**

The purpose of this study is to document the local economic impacts of visitors to Sequoia National Park (SEQU) and Kings Canyon National Park (KING) in 2002. Economic impacts are measured as the direct and secondary effects of sales, income, jobs, and value added in the local area resulting from spending by park visitors. The economic estimates are produced using the Money Generation Model 2 (MGM2) (Stynes and Propst, 2000). Three major inputs to the model are:

- 1) Number of visits broken down into lodging-based segments,
- 2) Spending averages for each segment, and
- 3) Economic multipliers for the local region

Inputs are estimated from the Sequoia and Kings Canyon National Parks Visitor Study, the National Park Service Public Use Statistics, and IMPLAN input-output modeling software. The MGM2 model provides a spreadsheet template for combining park use, spending and regional multipliers to compute changes in sales, personal income, jobs and value added in the region.

### **Sequoia and Kings Canyon National Parks**

Sequoia and Kings Canyon National Parks (SEKI) were established in 1890 and 1940 respectively, to protect mountains, canyons, habitats, and the giant sequoia trees. Although Sequoia and Kings Canyon NPs were established by two separate acts of Congress, these two parks are adjoined and now managed as a single unit (Sequoia & Kings Canyon National Park, 2003). SEKI is bounded by the Sierra National Forest to the North, Inyo National Forest to the East, and Sequoia National Forest to the South (Figure 1). Yosemite and Death Valley National Parks are two to four hours away by car.

Sequoia and Kings Canyon National Parks offer year-round recreational activities, from hiking and camping in the summer to cross-country skiing during the winter. Around one third of summer visitors come from others states and 10% are international visitors (Littlejohn and Gramann, 2003). Fresno, Visalia, and Three Rivers are the major gateway communities. The park is about an hour driving distance to Interstate Highway 5 which provides connections to Los Angeles and San Francisco.

The park has a \$10 dollar vehicle entrance fee and a \$20 annual permit. There are three lodging facilities inside Kings Canyon National Park - the John Muir Lodge, Cedar Grove Lodge, and Grant Grove Lodge with rates ranging from \$90 to \$240 per room or \$45 to \$112 per cabin in 2003. Three additional lodges are available at Sequoia National Park, including the newest Wuksachi Village, Lodgepole Village, and Bearpaw High Sierra Camp, with room rates ranging from \$150~\$320 per night. There are 14 campgrounds in Sequoia and Kings Canyon NPs with a fee of \$12~\$20 per night. Three campgrounds are open year-round, Lodgepole, Azalea, and Potwisha, while others are available from May to October.



Figure 1. Sequoia & King's Canyon NP and the region  
Source: Visual Parks <http://www.virtualparks.org/main.html>

## The Region

Sequoia and Kings Canyon National Parks are located within the boundaries of Fresno and Tulare County, California. This two county region constitutes the local area for which the economic impacts are estimated. In 2001, population of the two-county region was 1.19 million with an average income per capita of \$21,381 (Bureau of Economic Analysis, 2003). Based on the IMPLAN economic data files for the two counties, total employment in 2000 was 606,621 full or part time jobs and total employee compensation was \$14.6 billion. The five most important sectors in terms of value added<sup>4</sup> are services, finance, insurance and real estate (FIRE), government, wholesale/retail trade and agriculture (Table 1). The three primary tourism sectors (hotels, restaurants and amusements) account for about 3% of value added.

<sup>4</sup> Value added is the sum of employee compensation, profits and rents and indirect business taxes. Value added captures the unique contribution of each sector to the region's economy. See Appendix A for details.

**Table 1. Economic Activity by Sector Group, Fresno and Tulare Counties, CA, 2000.**

Sector	Output (\$ millions)	Employment	Employee Comp. (\$ millions)	Total Value Added (\$ millions)	Pct of Value Added
Agriculture/Nat. Resources	\$ 6,845	129,859	\$ 1,250	\$ 2,956	11%
Mining	72	281	7	33	0%
Construction	3,932	32,445	879	1,477	6%
Manufacturing	8,164	42,870	1,499	2,454	9%
Transportation	1,709	16,600	454	810	3%
Communications	746	2,992	142	399	2%
Utilities	1,617	2,168	134	534	2%
Wholesale/Retail trade	5,196	83,157	2,083	3,931	15%
FIRE	6,530	32,688	864	4,507	17%
Services	8,221	136,513	3,209	4,920	18%
Government	4,134	87,780	3,664	4,133	15%
<b>Primary Tourism Sectors<sup>a</sup></b>					
Eat and Drink	999	28,023	315	531	2%
Hotels	148	3,180	47	88	0%
Amusements	304	8,066	66	150	1%
Total	48,616	606,621	14,612	26,922	100%

a. Tourism-related sectors are excluded from Services and retail trade sectors above.

Source: IMPLAN county data files, 2000

## Sequoia and Kings Canyon National Parks Visitor Study, 2002

A park visitor study was conducted at Sequoia and Kings Canyon National Parks from July 28 - August 3, 2002 (Littlejohn and Gramann, 2003). The study, conducted as part of the Visitor Survey Project (VSP), measured visitor demographics, trip planning, travel expenditures, facility importance, and service quality. Questionnaires were distributed to a sample of 809 visitors at three park entrances<sup>5</sup>. A total of 555 visitors returned questionnaires for a 69% response rate.

Three fourths of the park visitors made the trip primarily to visit Sequoia and/or Kings Canyon National Parks, 10% to visit the Sequoia National Forest and the remainder for other reasons. Thirty-eight percent of visitors spent less than 24 hours in the park. However, 73% of visitors stayed overnight in the local area. Among overnight visitors, 58% stayed in Sequoia/

<sup>5</sup> Questionnaires were distributed proportionally at Ash Mountain (44%), Big Stump (44%), and Look Out Point Entrances (13%).

Kings Canyon National Park, 16% in the Sequoia NF, and 37% in surrounding communities<sup>6</sup>. Three Rivers, Visalia and Fresno were the three most frequently cited lodging locations outside the park/forest.

Littlejohn and Gramann (2003) report that an average visitor party spent \$317 on the trip within the local area, 36% for lodging, 14% for restaurants/bars and 12% for groceries. These expenses cover an average party consisting of roughly two adults and one child. Readers are referred to the VSP report for other results.

The economic analysis of the visitor survey examines spending patterns from the VSP study in more detail, developing spending profiles for seven distinct visitor segments. The visitor survey data are also used to estimate selected parameters in the MGM2 model, including segment shares, party sizes, lengths of stay, and park re-entry rates for each visitor segment. Results from the survey are extrapolated to all visitors during calendar year 2002 to estimate total spending and associated impacts on an annual year basis.

The visitor survey can only be assumed to represent peak summer season visitors. Some adjustments are made to the estimates of segment shares, party sizes, and lengths of stay to reflect differences in fall, spring and winter visitors. The NPS Public Use Statistics for Sequoia and Kings Canyon National Parks for 2002 are used to extrapolate to annual use as well as to capture seasonal use patterns in both recreation visits and overnight stays.

Some of the results that follow will differ from those in Littlejohn and Gramann (2003) due to some additional data cleaning, dropping of outliers for the economic analysis, and in some cases adjusting figures to represent off-season visitors. Analyses conducted by visitor segment necessarily omit cases with missing information for the variables required to identify segments. There were some inconsistencies in the survey responses that would not be apparent in the VSP analyses, as the VSP report is generally limited to description of variables one at a time. For example, 42 cases that answered “no” to the question about staying overnight in the area reported lodging expenses later in the survey. These cases were recoded to overnight trips for the spending analyses.

## **Recreation Visits**

Total reported recreation visits to Sequoia and Kings Canyon National Parks (SEKI) in year 2002 was 920,292 and 545,420, respectively (Table 2). Total overnight stays at lodges, campgrounds and backcountry sites in the two parks combined were 94,705, 225,919, and 114,061 respectively. Camping in developed or backcountry sites is popular at SEKI, with 3.5 times as many visitors camping compared to those staying in park lodges. Forty-seven percent of recreation visits, 45 percent of lodging nights, and three-fourths of camping nights occur during the summer season from June through August, 2002.

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<sup>6</sup> These percentages add to more than 100% as some visitors stayed in multiple locations during their trip.



**Table 2. Public Use Statistics for Sequoia and Kings Canyon National Parks, 2002**

Month	Recreation visits		Overnight Stays (person- nights)					
	SEQU	KING	<u>Lodging</u>		<u>Camping</u>		<u>Backcountry</u>	
	SEQU	KING	SEQU	KING	SEQU	KING	SEQU	KING
January	20,699	23,120	2,657	908	384	191	123	8
February	22,307	18,934	3,043	997	509	309	573	30
March	34,830	22,486	3,500	1,271	1,170	528	492	43
April	48,040	25,650	4,361	1,615	2,747	1,733	825	92
May	105,262	50,253	4,270	2,977	6,742	9,931	2,396	2,125
June	118,442	54,855	7,819	5,179	20,906	14,284	8,975	7,645
July	153,278	90,372	7,776	6,535	35,174	25,704	14,107	16,560
August	169,075	96,069	8,271	6,689	36,806	35,378	23,764	19,444
September	99,319	69,009	6,658	3,948	10,506	10,755	5,811	7,102
October	69,649	54,941	5,017	2,595	5,088	4,627	2,041	1,251
November	42,811	21,833	3,228	1,443	1,472	146	311	168
<u>December</u>	<u>36,580</u>	<u>17,898</u>	<u>3,102</u>	<u>846</u>	<u>585</u>	<u>244</u>	<u>159</u>	<u>16</u>
Totals	920,292	545,420	59,702	35,003	122,089	103,830	59,577	54,484

Source: NPS Public Use Statistics (2003)

Simply adding the recreation visit estimates for the two parks will double count those who visit both parks on a single trip. Several approaches were used to estimate the number of unique visitors to the two parks. The simplest procedure is to omit the vehicle count at the Red Fir entrance in the NPS monthly public use vehicle counts for Sequoia NP. Visitors to Sequoia traveling southbound on the Generals Highway at Red Fir will already have been counted as visitors to Kings Canyon at the Big Stump entrance. The adjusted park use estimates are therefore based on vehicle entries at three entrances: Big Stump, Ash Mountain and Lookout Point.

Based on the 2002 vehicle entry figures, there were 103,775 vehicle entries at the Red Fir entrance, which equates to 330,005 recreation visits that would be double counted (Table 3). After adjusting for additions to recreation visits for buses and deletions for non-recreation vehicles, the total unique recreation visits to the two parks, considered as a single unit, was 1.135 million in 2002. Based on these figures 36% of Sequoia visitors also visit Kings Canyon on the trip and 61% of Kings Canyon visitors visit Sequoia on the same trip. Spending and impact estimates reported below are based on 1.135 million recreation visits.

The overlap between Sequoia and Kings Canyon visitors was also examined using some of the visitor survey questions. Based on the sites that visitors reported having visited on their trip, 65% of Sequoia visitors also visited Kings Canyon and 99% of Kings Canyon visitors also visited Sequoia. These percentages are much higher than the vehicle counts indicate, suggesting either that the VSP study sample may not be completely representative or that visitors may have reported sites they had visited on a previous trip.

**Table 3. Vehicle/Visitor counts for Sequoia/Kings Canyon NP, 2002**

Entrance	Vehicle entries	Recreation Visits <sup>a</sup>
Red Fir	103,775	330,005
Ash Mt	168,904	537,115
Lookout Point	<u>17,786</u>	<u>56,559</u>
<b>Sequoia Total</b>	<b>290,465</b>	<b>923,679</b>
Big Stump	<u>169,000</u>	<u>537,420</u>
<b>Kings Canyon Total</b>	<b>169,000</b>	<b>537,420</b>
Two Parks Combined	459,465	1,461,099
Double Counted Visits	<u>103,775</u>	<u>330,005</u>
<b>Two Parks, Unique Visits</b>	<b>355,690</b>	<b>1,131,094</b>

<sup>a</sup> Does not include bus visits and reductions for non-recreation vehicles.

Source: NPS Monthly Public Use Reporting System. Vehicle counts are available at <http://www.nps.gov/parks.html> in IO-157 reporting section

## MGM2 Visitor Segments

The MGM2 model recommends dividing visitors into segments to help explain differences in spending across distinct user groups. The MGM2 visitor segments are formed based on information from the Sequoia and Kings Canyon National Parks Visitor Study. “Whether visitors have spent the night in the region” and “ZIP code” are used to differentiate local day visitors, non-local day visitors, and overnight visitors. Lodging types and expenditures are used to separate overnight visitors into those staying inside or outside the park in hotel, campground or backcountry facilities. Seven lodging segments were established for Sequoia and Kings Canyon NPs visitors:

**Local day users:** Day visitors who reside in the surrounding area, defined to include the 932 and 936 three digit ZIP-code areas.

**Non-local day users:** Visitors from outside the region, not staying overnight in the area. This includes day trips and pass-through travelers. Visitors staying with friends/relatives or at an owned seasonal home in the area are also included in this category

**Hotel-inside park:** Visitors staying in hotels or cabins inside Sequoia and Kings Canyon National Parks

**Camp-inside park:** Visitors staying in developed campgrounds inside Sequoia and Kings Canyon National Parks

**Backcountry campers:** Visitors staying overnight in backcountry sites

**Motel-outside:** Visitors staying in motels, cabins, or B&B's within the local region (Tulare and Fresno counties) outside the park (includes stays in the Sequoia National Forest).

**Camp-outside :** Visitors staying in private or other public campgrounds within the local region (Tulare and Fresno counties) outside the park (includes stays in the Sequoia National Forest).

The unit of analysis for visitor spending is the party day/night. Expenditures by an average travel party are measured on a party trip basis and then converted to a party day/night basis by dividing by an average length of stay in the region. Recreation visits, as measured by the National Park Service, are converted to a party day basis to be consistent with the spending figures.

A recreation visit is the count of one person entering the park. Recreation visits are converted to party nights<sup>7</sup> as follows:

Vehicle entries to the park = recreation visits / party size (1)

Party trips to the park = Vehicle entries/ re-entry rate (2)

Party nights in the area = Party trips \* length of stay in the area (3)

Distinct re-entry rates, party sizes and lengths of stay were estimated for each visitor segment using the 2002 visitor survey data (Table 4). The average party size ranges from 3.0 for non-local day visitors to 3.9 for visitors camping outside the park. Overnight visitors stayed between 2.2 and 3.5 nights in the local region<sup>8</sup>. Entry rates are based on responses to a question in the VSP survey regarding the number of entries at Ash Mountain/Big Stump entrances during the trip. Campers staying inside the park enter the park an average of 1.3 times per trip, 1.5 times if camping outside the park. It is assumed that the reported entry rate equals the number of times a visitor was counted by the public use count protocols. In equation (2) above, the number of vehicle entries is divided by the entry rate to avoid multiple counting of visitors who re-enter one or both parks on a given trip to the area.

**Table 4. Visit Conversion Parameters by Visitor Segments for Sequoia and Kings Canyon NP Visitors, 2002**

Parameter	<u>Day Trips</u>		<u>Overnight Trips</u>				
	Local	Non-local	Hotel- Inside	Camp - Inside	Back- country	Hotel- Outside	Camp - Outside
Length of stay <sup>a</sup>	1.00	1.00	2.72	3.46	3.43	2.21	2.72
Party size <sup>b</sup>	3.27	2.98	3.28	3.49	3.50	3.06	3.89
Entry rate <sup>c</sup>	1.02	1.02	1.08	1.28	1.04	1.37	1.48
Number of cases	49	45	36	88	23	98	21

<sup>a</sup> Lengths of stay were reduced from VSP study estimates by 10% to account for shorter off-season stays.

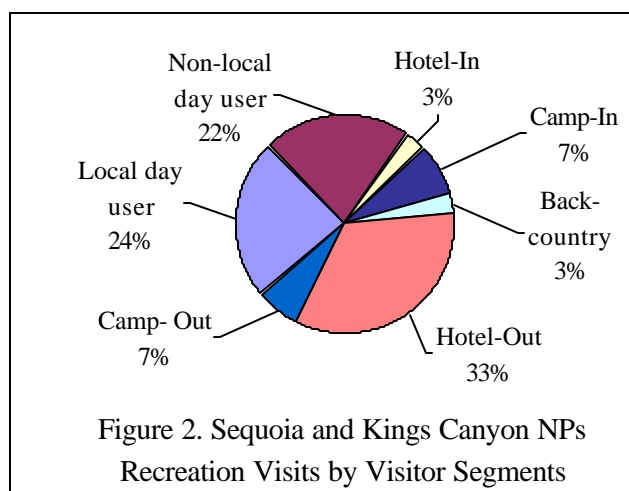
<sup>b</sup> Party sizes were adjusted to be consistent with the overall party size conversion factor of 3.18 in the public use reporting system. Figures from the VSP study were reduced by 10% to account for hypothesized smaller off-season party sizes.

<sup>c</sup> Entry rate is the number of times visitors reported using Ash Mountain/Big Stump entrances on their trip. Cases not answering the re-entry question were treated as a single entry.

<sup>7</sup> A party night is a travel group staying one night in the area. The travel group is usually all individuals in the same vehicle or staying in the same room or campsite. For day trips, estimates are in party days.

<sup>8</sup> Stays of more than 8 days or groups of more than 8 people were omitted in computing these averages.

Following equations (1) to (3), 1.135 million recreation visits were converted to 357,000 vehicle entries and 306,000 party-trips to the area in 2002 (Table 5). Visitors staying at hotels outside the park accounted for 33% of the total recreation visits, followed by non-local day visitors (including stays with friends and relatives or seasonal homes in the area), and local day visitors (22%) (Figure 2). These recreation visits equated to 536,000 party nights in the region. Including stays inside and outside the park, visitors staying in hotels/lodges account for 42% of total party nights, and campers in tents or backcountry sites represent 28% of party nights. Park visitors accounted for 30,000 hotel room nights inside the park and 193,000 hotel room nights outside the park in area motels. Campers accounted for 71,000 and 45,000 camping party nights inside and outside the park<sup>9</sup>, respectively, in 2002.



**Table 5. Visit Measures for Sequoia and Kings Canyon NP by Segments, 2002**

Visits	Day Trips		Overnight Trips					Total
	Local	Non-local	Hotel-Inside	Camp - Inside	Back-country	Hotel-Outside	Camp - Outside	
Recreation visits (000's)	271	250	38	84	35	379	77	1,135
Vehicle entries (000's)	85	79	12	26	11	119	24	357
Party trips (000's)	84	77	11	21	11	87	16	306
Party nights (000's)	84	77	30	71	37	193	45	536
Pct of recreation visits	24%	22%	3%	7%	3%	33%	7%	100%
Pct of vehicle entries	24%	22%	3%	7%	3%	33%	7%	100%
Pct of party trips	27%	25%	4%	7%	3%	28%	5%	100%
Pct of party nights	16%	14%	6%	13%	7%	36%	8%	100%

## Visitor spending

Spending averages were estimated from the Sequoia & Kings Canyon Visitor Study (Littlejohn and Gramman 2003). Spending averages were computed on a party trip basis for each segment and then converted to a party night basis by dividing by an average length of stay. The survey covered expenditures inside Sequoia & Kings National Parks and Sequoia National Forest (treated as spending inside park/forest), and also spending in the surrounding area including Three Rivers, Fresno, and Visalia. Spending averages are reported by segment in Table 6 on a party-trip basis.

<sup>9</sup> Hotel and developed camping stays in the Sequoia National Forest are treated as outside the park, while backcountry stays in the park and national forest are combined.

**Table 6. Sequoia and Kings Canyon NP Visitor Spending by Lodging Segments, 2002 (\$ per party per trip)**

Spending Category	<u>Day Trips</u>		<u>Overnight Trips</u>				
	Local	Non-local	Hotel- Inside	Camp - Inside	Back- country	Hotel- Outside	Camp - Outside
<b>Expenditures inside park/forest</b>							
Hotels, motels, cabins etc.	0.0	0.0	387.2	0.0	0.0	55.4	0.0
Camping fees	0.0	0.0	0.0	52.0	4.7	0.0	26.0
Guide fees and charges	0.9	0.0	4.4	3.9	3.5	1.4	1.0
Restaurants and bars	4.8	9.2	111.7	18.2	2.3	8.2	16.0
Groceries and take out food	4.6	3.4	23.2	32.8	18.7	6.5	17.4
Gas and oil	1.7	3.1	6.7	6.4	2.7	1.8	3.3
Admissions and entertainment fees	10.2	8.2	11.8	21.7	9.1	8.6	9.2
All other purchases	4.8	6.9	22.8	26.4	6.3	13.1	18.0
<u>Donations</u>	2.3	0.6	2.8	1.1	0.1	1.4	0.5
Sub Total	29.4	31.4	570.7	162.5	47.5	96.4	91.3
<b>Expenditures outside park/forest</b>							
Hotels, motels, cabins etc.	0.0	0.0	0.0	0.0	0.0	160.8	0.0
Camping fees	0.0	0.0	0.0	0.0	0.0	0.0	32.9
Guide fees and charges	0.0	0.0	0.0	0.1	0.0	0.2	0.0
Restaurants and bars	12.1	7.3	9.9	3.2	6.5	60.7	10.5
Groceries and take out food	4.2	4.6	7.6	18.4	16.7	20.8	22.1
Gas and oil	10.0	11.6	18.9	16.6	15.7	27.2	14.0
Other transportation expenses	0.0	0.7	11.1	30.2	0.0	34.3	0.0
Admissions and entertainment fees	0.4	1.4	0.0	0.1	2.6	3.8	0.0
All other purchases	1.0	5.0	0.0	7.4	0.9	15.2	4.3
<u>Donations</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.3</u>	<u>0.0</u>
Subtotal	27.8	30.6	47.5	75.9	42.4	323.2	83.8
<b>Grand Total</b>	<b>\$57.1</b>	<b>\$62.0</b>	<b>\$618.2</b>	<b>\$238.4</b>	<b>\$89.9</b>	<b>\$419.5</b>	<b>\$175.1</b>
Pct of spending inside the park/forest	51%	51%	92%	68%	53%	23%	52%

Day visitors spent around \$60 per party per trip, of which about half was spent inside the parks. Visitors staying at lodges inside the park spend \$618 per trip, about \$200 more than visitors staying at hotels outside the park. Visitors staying in hotels/lodges inside the park spend 92% of their overall trip expenditures within the park. Campers staying at campsites or backcountry sites inside the park spent \$238 and \$90, respectively, per party per trip. Visitors staying in lodges or campgrounds in the Sequoia National Forest are classified in the “outside the park” segments, although their spending in the national forest is included as being inside the park/forest<sup>10</sup>.

<sup>10</sup> The Sequoia, Kings Canyon NPs Visitor Study asked visitors to report their spending in the Sequoia National Forest as spending “INSIDE THE PARK”.

Spending is converted to a party day/night basis by dividing trip spending (Table 6) by the length of stay in the region (Table 4). The per party day/night spending averages range from a high of \$237 per night for visitors staying in park lodges or cabins to \$27 per day for backcountry campers. Campers spend \$72 per night if staying inside the park and \$67 if staying outside (including the national forest). The average per night camping fee was \$16 if staying inside the park and \$23 if staying outside. Sampling errors for the spending averages at a 95% confidence level are 5% for the overall average and range from 5% to 25% for individual segments.

**Table 7. Sequoia and Kings Canyon NP Visitor Spending by Lodging Segments, 2002 ( \$ Per Party Per Day)**

Category	<u>Day Trips</u>		<u>Overnight Trips</u>				
	Local	Non-local	Hotel- Inside	Camp - Inside	Back- country	Hotel- Outside	Camp - Outside
<b>Expenditures inside park/forest</b>							
Hotels, motels, cabins etc.	\$ 0.0	\$ 0.0	\$ 148.6	\$ 0.0	\$ 0.0	\$ 24.8	\$ 0.0
Camping fees	0.0	0.0	0.0	15.7	1.4	0.0	10.0
Guide fees and charges	0.9	0.0	1.7	1.2	1.1	0.7	0.4
Restaurants and bars	4.8	9.2	42.9	5.5	0.7	3.8	6.1
Groceries and take out food	4.6	3.4	8.9	9.9	5.7	3.1	6.7
Gas and oil	1.7	3.1	2.6	1.9	0.8	0.8	1.3
Admissions and entertainment fees	10.2	8.2	4.5	6.5	2.8	4.0	3.5
All other purchases	4.8	6.9	8.8	7.9	1.9	6.2	6.9
<u>Donations</u>	<u>2.3</u>	<u>0.6</u>	<u>1.1</u>	<u>0.3</u>	<u>0.0</u>	<u>0.7</u>	<u>0.2</u>
Sub Total	29.4	31.4	219.0	48.9	14.5	45.4	35.0
<b>Expenditures outside park/forest</b>							
Hotels, motels, cabins etc.	0.0	0.0	0.0	0.0	0.0	72.0	0.0
Camping fees	0.0	0.0	0.0	0.0	0.0	0.0	12.6
Guide fees and charges	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Restaurants and bars	12.1	7.3	3.8	1.0	2.0	28.6	4.0
Groceries and take out food	4.2	4.6	2.9	5.5	5.1	9.8	8.5
Gas and oil	10.0	11.6	7.3	5.0	4.8	12.8	5.3
Other transportation expenses	0.0	0.7	4.3	9.1	0.0	16.2	0.0
Admissions and entertainment fees	0.4	1.4	0.0	0.0	0.8	1.8	0.0
All other purchases	1.0	5.0	0.0	2.2	0.3	7.2	1.6
<u>Donations</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.1</u>	<u>0.0</u>
Subtotal	27.8	30.6	18.2	22.8	12.8	152.3	32.1
<b>Grand Total</b>	<b>\$ 57.1</b>	<b>\$ 62.0</b>	<b>\$ 237.2</b>	<b>\$ 71.7</b>	<b>\$ 27.4</b>	<b>\$ 197.7</b>	<b>\$ 67.1</b>
Standard error of mean	14.6	8.0	21.4	15.8	5.5	10.9	13.4
Percent error (95% confidence level)	25%	13%	9%	22%	19%	5%	20%

Total visitor spending is calculated by multiplying the number of party-nights in Table 5 by the per night spending averages in Table 7. The calculations are carried out segment by segment, summing across the seven segments to obtain the overall total. Visitors to Sequoia and

Kings Canyon NPs in 2002 spent \$65.0 million in the local area (Table 8). Visitors spent \$27.4 million on motel, hotel or campground fees, \$11.3 million on restaurant meals, and \$6.4 million on groceries. Visitors staying in hotels outside the park account for sixty percent (\$39.2 million) of the total visitor spending in the region. Excluding spending by local day visitors, park visitors spent a total of \$60.2 million in the region in 2002.

**Table 8. Total Spending by Sequoia and Kings Canyon NPs Visitors in the Region, 2002 (\$ million's)**

Spending category	Day Trips		Hotel- Inside	Overnight Trips				Total	Pct
	Local	Non- local		Camp - Inside	Back- country	Hotel- Outside	Camp - Outside		
Motel, hotel cabin or B&B	\$ 0.00	\$ 0.00	\$ 4.46	\$ 0.00	\$ 0.00	\$ 20.68	\$ 0.00	\$ 25.14	39%
Camping fees	0.00	0.00	0.00	1.12	0.11	0.00	1.01	2.24	3%
Restaurants & bars	1.41	1.26	1.40	0.46	0.10	6.25	0.45	11.34	17%
Groceries, take-out food/drinks	0.74	0.61	0.35	1.10	0.39	2.49	0.68	6.36	10%
Gas & oil	0.98	1.13	0.30	0.49	0.20	2.63	0.30	6.03	9%
Local transportation	0.00	0.05	0.13	0.65	0.00	3.11	0.00	3.94	6%
Admissions & fees	1.15	0.79	0.22	0.58	0.17	1.42	0.18	4.51	7%
<u>Souvenirs and other expenses</u>	<u>0.49</u>	<u>0.91</u>	<u>0.26</u>	<u>0.72</u>	<u>0.08</u>	<u>2.57</u>	<u>0.38</u>	<u>5.43</u>	<u>8%</u>
Total	4.78	4.76	7.13	5.12	1.06	39.16	3.00	65.00	100%
Percent	7%	7%	11%	8%	2%	60%	5%	100%	

Dean Runyan Associates (2003) estimated that all travelers to Fresno and Tulare Counties spent \$1.15 billion in the area in 2001, 69% of which was in Fresno County (Table 9). Park visitor spending therefore represents about 5% of all tourist spending in the region. Dean Runyan Associates includes all expenditures in Fresno and Tulare counties associated with trips of 50 miles or more away from home by domestic and foreign travelers<sup>11</sup>. A third of overall tourist spending was by travelers staying at hotels, 31% was on day trips and 19% was by visitors staying with friends and relatives. Visitor spending mainly went to restaurants (23%), retail sales (22%), and ground transportation expenses (19%).

The hotel/motel and camping segments account for a much higher percentage of spending among park visitors than among tourists in general. Spending associated with day trips or stays with friends and relatives or in seasonal homes are significantly lower as a share of park visitor spending compared to tourists in general (Table 9). Lodging expenses account for 45% of total park visitor spending<sup>12</sup>, compared to only 16% for tourists in general. While representing 5% of overall tourist spending in the region, park visitors account for 15% of lodging receipts and 10% of tourist spending in food stores. Park visitors account for smaller percentages of tourist retail expenditures and spending on recreation and amusements.

<sup>11</sup> Did not include airfare.

<sup>12</sup> This figure excludes local-day visitor expenditure.

**Table 9. Comparison of National Park Visitor Spending and Overall Tourist Spending in the Tulare/Fresno County Region.**

	General visitors <sup>c</sup>		National Park visitors		Pct
Destination	Total		Total		by park
Spending (\$ Million)	Spending	Pct	Spending <sup>a</sup>	Pct	visitors
<b>Visitor segments</b>					
Hotel, Motel	382	33%	46.3	77%	12%
Campground	91	8%	9.2	15%	10%
Private Home	217	19%			
Vacation Home	108	9%			
<u>Day Travel</u>	<u>355</u>	<u>31%</u>	<u>4.8<sup>b</sup></u>	<u>8%</u>	<u>1%</u>
Total	1,153	100%	60.2	100%	5%
<b>Sectors</b>					
Accommodation	182	16%	27.4	45%	15%
Eating, Drinking	269	23%	9.9	16%	4%
Food Stores	59	5%	5.6	9%	10%
Ground Transport	217	19%	9.0	15%	4%
Recreation	171	15%	3.4	6%	2%
<u>Retail Sales</u>	<u>256</u>	<u>22%</u>	<u>4.9</u>	<u>8%</u>	<u>2%</u>
Total	1,153	100%	60.2	100%	5%

<sup>a</sup> Excludes local day visitor spending for consistency with Dean Runyan Associates.

<sup>b</sup> Visitors staying at seasonal homes (vacation homes) or with friends & relatives are treated as non-local day visitors in the MGM2 analysis and only spending associated with the park visit is included.

<sup>c</sup> Source for tourist spending in general is Dean Runyan Associates (2003). The Dean Runyan estimates are for 2001.

## Economic Impacts of Visitor Spending

Economic impacts are estimated by applying the total spending in Table 8 to a set of sector specific multipliers for the Fresno/Tulare county region<sup>13</sup>. The \$65.0 million spent by Sequoia and Kings Canyon NP visitors in 2002 had a direct economic impact on the region of \$56.5 million in direct sales, \$22.3 million in personal income (wages and salaries), \$33.6 million in value added, and supported 1,243 jobs in the region (Table 10). The lodging sector (hotels and campgrounds) received the largest amount of direct sales (\$27.4 million), followed by restaurants (\$11.3 million). Park visitor spending directly supports 525 jobs in hotels, 309 restaurant jobs, 142 jobs in recreation and entertainment businesses, and 119 retail trade jobs.

Direct effects are less than total spending, as only the retail and wholesale margins on visitor purchases of goods accrue to the local economy. The local region surrounding Sequoia

<sup>13</sup> Multipliers are estimated with IMPLAN input-output modeling software based on economic data for the two county region in 2000. Sector specific multipliers are reported in Appendix B.



and Kings Canyon NP captures 87% of visitor spending. Thirteen percent of visitor spending leaks out of the local economy to cover the costs of imported goods bought by visitors<sup>14</sup>.

The overall tourism sales multiplier for the region is 1.61, meaning that an additional \$0.61 in sales is generated through secondary effects for every dollar of direct sales. Secondary effects generated an additional 417 jobs, about \$12.8 million in personal income and \$20.7 million in value added.

**Table 10. Economic Impacts of Sequoia and Kings Canyon NPs Visitor Spending, 2002**

Sector/Spending category	Direct Sales \$000's	Jobs	Personal Income \$000's	Value Added \$000's
<b>Direct Effects</b>				
Motel, hotel cabin or B&B	\$25,144	525	\$9,601	\$14,952
Camping fees	\$2,238	47	\$854	\$1,331
Restaurants & bars	\$11,341	309	\$4,264	\$6,026
Admissions & fees	\$4,514	142	\$1,918	\$2,870
Local transportation	\$3,941	78	\$2,042	\$2,530
Retail Trade	\$5,668	119	\$2,786	\$4,555
Wholesale Trade	\$1,348	13	\$563	\$929
<u>Local Production of goods</u>	<u>\$2,284</u>	<u>10</u>	<u>\$253</u>	<u>\$450</u>
<b>Total Direct Effects</b>	<b>\$56,479</b>	<b>1,243</b>	<b>\$22,282</b>	<b>\$33,643</b>
<u>Secondary Effects</u>	<u>\$34,191</u>	<u>417</u>	<u>\$12,774</u>	<u>\$20,717</u>
<b>Total Effects</b>	<b>\$90,670</b>	<b>1,660</b>	<b>\$35,055</b>	<b>\$54,360</b>

## Study Limitation and Error

The accuracy of the MGM2 estimates rests primarily on the three inputs: visits, spending averages, and multipliers. The customized multipliers for Fresno and Tulare County estimated with the IMPLAN system should capture the structure of the local economy reasonably well. Visitor segment shares and spending averages are derived from the 2002 Sequoia & Kings Canyon National Parks Visitor Study. This study is subject to sampling and measurement errors, not to mention the errors that may be introduced in adapting the estimates to park visitors year-round.

Spending profiles estimated from the VSP survey data are consistent with those at other parks taking into consideration local room and campsite rates. The sampling errors on the

<sup>14</sup>For example, if a visitor buys \$50 dollars worth of clothing at a local store, the store receives the retail margin (assume \$20 dollars), the wholesaler or shipper (if local) may receive \$5 dollars, and the remaining producer price of the clothing (\$25 dollars) leaks immediately outside the local economy, unless the clothing is manufactured in the local region.

spending averages were 5% overall and ranged from 5- 25% for individual segments<sup>15</sup>. Spending averages can also vary by about 5% based on decisions to treat missing spending data as zeros or not, and how many and which outliers to delete<sup>16</sup>. Our analysis omitted cases spending more than \$1,000 per party per day and cases with missing values for all spending categories (See Appendix C for the distribution of cases omitted for the analysis).

The greatest potential sources of error are likely the estimate of total recreation visits and the allocation of these visits to the MGM2 lodging segments. One indicator of potential errors is a comparison of the percentage of visitors in the survey reporting overnight stays in the park in comparison to the official park overnight stay figures. If the proportions of visitors staying inside the park from the (unadjusted) sample are expanded to all visitors, hotel and camping overnight stays inside the park are three to four times those reported in the Public Use Statistics. Seasonal differences in the tendency of park visitors to stay overnight inside the park account for at best a third of this discrepancy.

Adjustments were employed to the VSP study results to reduce seasonal and other potential biases in applying VSP survey results to annual park use. First, segment shares for overnight visitors staying at hotels, tent campsites, and backcountry campsites inside the park were reduced to be consistent with the official NPS overnight stay figures for the two parks. The percentage of visitors camping outside the park was adjusted by the same percentage as that for camping inside the park to account for lower camping shares during the non-summer period. The shares for the remaining three segments (local day visitor, non-local day visitor, and hotel-outside the park) were correspondingly increased. Second, per night spending on rooms was reduced by 5% to reflect lower off-season rates. Lengths of stay were reduced by 10% to account for shorter stays during the off-season, and party sizes estimated in the VSP survey were reduced to be consistent with an overall party size of 3.18, as employed in public use protocols for the park.

Finally, total recreation visits to the two parks was reduced by a third to account for park re-entries and double counting of visitors who visit both parks on the same trip. We assume that 1) omitting vehicle counts at the Red Fir entrance captures the overlap in the two park visitation figures and 2) park visitors were able to estimate the number of times they entered the park. No adjustments were made in entry rates for a possible seasonal bias, as we assumed the omission of the Lookout Point entrance in the re-entry question would likely counteract lower re-entry rates during fall, winter and spring.

Depending on the direction and magnitude of errors in visits, spending, and multipliers, the errors may compound or cancel each other. The most important potential errors are in the estimates of visits by lodging segments. As the model is linear, doubling visitors will double spending and impacts. Errors in other parameters, such as the re-entry rate, length of stay and party size, would also directly translate into errors in the number of party nights, which is multiplied by the spending averages. For example, if we double the re-entry rate to both parks,

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<sup>15</sup> The sampling errors depend on the number of cases sampled in each subgroup and the within group variations in spending.

<sup>16</sup> Including all spending outliers will increase the average by 2% (n=1). Treating all cases with missing values as zero's will decrease the average by 7% (n=34).

the total recreation visits will be reduced by half and so will the total visitor spending. Using a 95% confidence interval on the spending averages and total recreation visits in 2002, the park visitor spending is estimated to range between \$62 million and \$68 million in 2002.

In addition to these statistical issues, there are also conceptual issues regarding how much and which spending the park may claim. Around 76% of park visitors indicated that Sequoia and Kings Canyon NPs was their primary destination (Littlejohn and Gramann, 2003). Another 10% of visitors identified the Sequoia National Forest as the primary destination. We adopted a conservative approach for non-primary purpose trips, counting only the equivalent of one day's spending for cases whose primary purpose was visiting friends/relatives or staying at seasonal homes.

Local visitors are usually excluded in estimating economic impacts, but have been included here. Since they are a distinct segment, their contribution to the totals is readily estimated and subtracted from totals, as desired. Locals accounted for about \$4.8 million or 7% of overall visitor spending.

## Summary and Discussion

Visitors to Sequoia and Kings Canyon NP spent \$65.0 million within the parks and surrounding gateway communities (Three Rivers, Fresno, and Visalia) in 2002. The total economic impact of visitor spending was \$90.7 million in direct sales, \$35.1 million in personal income, \$54.4 million in value added and 1,660 jobs. Sectors receiving the greatest direct benefit from park visitors were lodging (\$27.4 million in direct sales) and restaurants (\$11.3 million).

The park's relative importance to the local economy can be identified by comparing these figures with local tourism and economic statistics. Total lodging sales in Fresno and Tulare County was \$182 million<sup>17</sup> and total tourism spending was around \$1.15 billion in 2001 (Dean Runyan Associates, 2003). Sequoia and Kings Canyon NPs visitors contributed around \$60.7 million in overall spending and \$27.7 million in the lodging sector. This spending represents about 5% of total tourism spending and 15% of total lodging sales in the two county region.

Estimates of the economic impacts of park visitors demonstrate the role and importance of the park in the regional economy. It should be noted that these figure do not cover the impacts of park employees, park operations and construction expenditures on the local economy<sup>18</sup>. The overall spending and impact figures can be useful in garnering park support, and building partnerships with local community and tourism organizations.

The MGM2 model results can also be used to evaluate alternative management, development and marketing decisions. The marginal economic impacts of particular visitor segments are useful for evaluating particular actions. Table 11 shows the changes in sales, jobs,

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<sup>17</sup> IMPLAN reports only \$148 million in lodging sector sales in the two counties in 2000.

<sup>18</sup> A separate model is available for estimating these impacts from park budget data.

income and valued added associated with an increase or decrease of one thousand additional party-nights by each segment.

To evaluate the regional economic impacts of adding an additional 10 campsites in the park, for example, first compute the change in party nights – 10 sites occupied 100 nights yearly yields 1,000 extra party nights. Applying the marginal impacts for the “Camp-inside park” segment in Table 11, the expansion generates an additional \$57,000 dollars in direct sales in the region, \$23,000 in personal income, \$35,000 in value added, and 1.2 jobs in direct effects. The impact of this alternative could be compared to others such as expanding or reducing cabin or lodge capacity, or a promotional campaign to increase day trips.

**Table 11. Direct Impacts of An Additional 1,000 Party Nights by Lodging Segments, Sequoia and Kings Canyon NPs, 2002**

Segments	Direct Sales (\$000's)	Jobs	Personal Income (\$000's)	Value Added (\$000's)
(Marginal Impacts per 1,000 party-nights)				
Local day visitor	\$44	1.1	\$17	\$26
Non-local day visitor	\$45	1.1	\$18	\$27
Motel-In visitor	\$223	4.9	\$86	\$131
Camp-In visitor	\$57	1.2	\$23	\$35
Back-country visitor	\$20	0.4	\$8	\$12
Motel-Out visitor	\$184	4.0	\$73	\$109
Camp-Out visitor	\$54	1.1	\$20	\$32

The economic impacts presented in this report document the economic significance of 1.135 million recreation visits to Sequoia and Kings Canyon NPs in 2002. The impacts will vary from year to year with changes in prices, visitor volumes, the mix of visitors attracted, and other changes in the park and surrounding communities. The MGM2 model has built-in procedures to price adjust spending averages over time, so updated figures may be obtained fairly easily, if there are not significant changes in visitor use and spending patterns. In the absence of significant structural changes in the local economy, multipliers will be quite stable. So the primary input for updating the estimates are visit estimates, which must take into account any changes in the mix of visitors or their length of stay in the area.

Suggested research to further refine the spending and impact estimates would include (1) surveys of fall, winter and spring park visitors to refine the segment shares, party sizes, length of stay and spending profiles to include these seasons; (2) further validation of the MGM2 estimates using other local sources such as room taxes, park concession revenues, national forest visitor information, and other local tourism data; (3) surveys of visitors to the region more generally, in cooperation with local tourism organizations to better estimate the share of visitors staying overnight outside the park and to better capture interrelationships between the park and nearby communities.

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## Appendices

### Appendix A. Definition of Terms in the MGM2 Model

<i>Terms</i>	<i>Definition</i>
Sales	Sales of firms within the region to park visitors.
Jobs	The number of jobs in their region supported by the visitor spending. Job estimates are not full time equivalents, but include part time and seasonal positions.
Personal income	Wage and salary income, proprietor's income and employee benefits.
Value added	Personal income plus rents and profits and indirect business taxes. As the name implies, it is the value added by the region to the final good or service being produced. It can also be defined as the final price of the good or service minus the costs of all of the non-labor inputs to production.
Direct effects	Direct effects are the changes in sales, income and jobs in those business or agencies that directly receive the visitor spending.
Secondary effects	These are the changes in the economic activity in the region that result from the re-circulation of the money spent by visitors. Secondary effects capture the sum of indirect and induced effects.
Indirect effects	Changes in sales, income and jobs from industries that supply goods and services to the business that sell directly to the visitors. For example, linen suppliers benefit from visitor spending at lodging establishments.
Induced effects	Changes in economic activity in the region resulting from household spending of income earned through a direct or indirect effect of the visitor spending. For example, motel and linen supply employees live in the region and spend the income earned on housing, groceries, education, clothing and other goods and services.
Total effects	Sum of direct, indirect and induced effects. <ul style="list-style-type: none"> <li>▪ Direct effects accrue largely to tourism-related business in the area</li> <li>▪ Indirect effects accrue to a broader set of economic sectors that serve these tourism firms.</li> <li>▪ Induced effects are distributed widely across a variety of economic sectors.</li> </ul>
Marginal impacts	Economic impacts created by per additional visitors or dollars spent.

**Appendix B. Multipliers and Economic Ratios for Tulare/Fresno Counties, CA, 2000.**

Sector	<u>Direct effects</u>			Sales II	<u>Total effects multipliers</u>			
	Jobs/ Million sales	Income/ sales	Value Added /sales		Jobs II/ Million Sales	Income II/ sales	VA II/ sales	Sales I
Hotels And Lodging Places	21.46	0.38	0.59	1.63	29.55	0.62	0.98	1.30
Eating & Drinking	28.06	0.38	0.53	1.66	35.85	0.61	0.91	1.34
Amusement And Recreation	32.31	0.42	0.64	1.60	40.18	0.65	1.00	1.26
Auto repair and services	10.73	0.35	0.58	1.44	15.99	0.51	0.84	1.17
Local transportation	20.32	0.52	0.64	1.56	27.11	0.73	0.98	1.18
Sporting goods	9.29	0.21	0.38	1.53	15.47	0.41	0.69	1.31
Retail Trade	21.53	0.49	0.80	1.50	27.77	0.68	1.11	1.15
Wholesale trade	10.11	0.42	0.69	1.52	16.74	0.62	1.01	1.20

Source: IMPLAN input-output model of Tulare/Fresno County economy, 2000. All Type II multipliers are IMPLAN Type SAM.

**Brief explanation of table:**

Direct effects are economic ratios to convert sales to jobs, income and value added.

Jobs/Million sales is the number of jobs per million dollars in sales in each sector.

Income/sales is the percentage of sales going to wages and salaries (includes sole proprietor's income)

Value added (VA)/sales is the percentage of sales that is value added (VA covers all income, rents, profits and indirect business taxes).

Total effects are multipliers that capture the total effect relative to direct sales. These capture the impacts from the circulation of visitor spending within the local economy.

Sales II multiplier = (direct + indirect + induced sales)/ direct sales

Sales I captures only direct and indirect sales = (direct + indirect sales)/ direct sales.

Job II/ Million sales = total jobs (direct + indirect + induced) per \$ million in direct sales.

Income II /Sales = total income (direct + indirect + induced) per \$ of direct sales

VA II/ Sales = total value added (direct + indirect + induced) per \$ of direct sales.

**Using Hotel sector row to illustrate:**

Direct Effects: Every million dollars in hotel sales creates 21 jobs in hotels. Thirty-eight percent of hotel sales goes to wages and salaries of hotel employees and 59% of hotel sales is value added. That means 41% of hotel sales goes to purchase inputs by hotels. The wage and salary income creates the induced effects and the 41% spent on purchases by the hotel starts the rounds of indirect effects.

Multiplier effects: There is an additional 30 cents of indirect sales in the region for every dollar of direct hotel sales (type I sales multiplier = 1.30). Total secondary sales ratio is 63 cents per dollar of direct sales, which means 30 cents in indirect effects and 33 cents in induced effects. An additional 8 jobs are created from secondary effects for each million dollars in hotel sales (29.5 total jobs – 21.5 direct jobs per million sales). These secondary jobs are scattered across other sectors of the local economy. Including secondary effects, every million dollars of hotel sales in the two county region yields \$1.63 million in sales, \$620,000 in income, and \$980,000 in value added.

**Appendix C. Distribution of Valid Cases, Outliers, and Unqualified Cases from the Visitor Survey**

<i>Category</i>	<i>Frequency</i>	<i>Percent</i>
Valid cases	466	84%
Missing values on all spending categories	34	6%
Length of stay longer than 8 days	14	3%
Party size larger than 8 persons	39	7%
Spending per party per day higher than \$1,000	1	0%
<u>Overnight visitors reporting no spending</u>	<u>1</u>	<u>0%</u>
Total	555	100%